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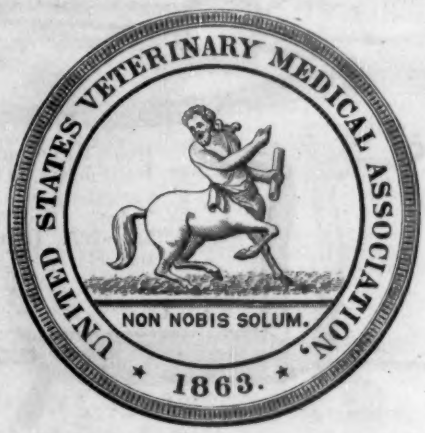

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AMERICAN VETERINARY REVIEW,

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ORIGINAL ARTICLES.

AN EPIDEMIC AMONG HORSES IN FORT RANDALL, NEBRASKA, 1856.

STATISTICAL REPORT ON THE SICKNESS AND MORTALITY IN THE ARMY OF THE UNITED STATES, 1855 TO 1860, p. 41.*

F. C. MADISON, *communicated by* K. F. HENSINGER.

"In the attempt to enumerate the general epizootics of North America within the last ten years, a few local ones came to my observation, to which a more general interest cannot be attached; among them the following seems to me worthy of communication, because it in part seems to exhibit the obnoxious influences of uncultivated soil, besides casting rather an unfavorable light on the military veterinary system of the U. S. army, which consists in the greater part of cavalry. It is also the only veterinary observation noted in these army reports, for a period of more than twenty years.

*Translated from the *Deutsche Zeitschrift fur Thiermedicine*, 1877, p. 101.

"The station of the regiments concerned is Fort Randall, in Nebraska, on the right bank of the Missouri, 43°01′ N. lat., 99°12′ W. lon., 1,245 feet above the level of the sea, on the most remote hills that border the endless prairie, opposite the Sioux and other Indians. Adequate to the situation, continually cold in the winter, the lowest point—26° F. highest 104°; earliest frost on the 26th September, the last on May 15th, but often much later, even in August; the Missouri frozen over from the beginning of December until March 1st. (It is one of the healthiest stations for human beings).

"A very fatal disease manifested itself among the dragoon horses, which is supposed not to have been described in works on veterinary surgery. Four companies of the Second Dragoons arrived at this port about the 10th of August, 1856, one squadron from Fort Lookout, and one from Big Sioux river, the latter accompanied by a number of new or remount horses. The four companies encamped on the east or lower side of the dry ravine, separating the dragoons and infantry camps. About the 20th of August the disease commenced simultaneously in all four companies, and many horses died, not, however, until after the lapse of weeks and months. The following symptoms were observed: first, that among the remount horses from below was a sort of catarrh, or distemper, with running at the nose, and among all the horses a swelling of the skin of the throat and jaw; also inflammation, swelling, and suppuration of the sheath, tenderness and inflammation of the feet, followed by suppuration at the point where the hoof joins the skin, the hoof, in a measure, detatching itself, and a new one forming in its place. These were also accompanied by a loss of manes and tails. The appetite was uniformly good; but from extreme tenderness of the feet, they were unable to move about in search of food, and it appears that at that time they were entirely dependent upon grazing, there being no forage at the port of issue. Sorrel horses appeared to suffer most, but no color escaped. The private horses of officers shared the fate of public animals. A few mules and Indian ponies were similarly affected. The acclimated suffered equally with the unacclimated. No treatment was effectual, or afforded permanent

relief. Bleeding in the feet was tried, but its effect was merely temporary. Every case of disease originated on the lower side of the dry ravine, above alluded to. After forage was provided for the horses no new cases occurred, and hence it is fair to infer, that a liberal allowance of forage in the beginning might have rendered the disease much less fatal, or have prevented it. Whether the disease was caused by eating any poisonous herbs, or propagated in any manner by contagion, could not be satisfactorily determined, the origin and progress of the malady being something entirely new, even to the Indians or half-breeds of the country. One post-mortem was made of a horse that died late in the winter, but developed nothing important; one lung was diseased, about one-third of the stomach was denuded of its inner lining, and contained botts and with the large intestines inflamed. It is well to remark that we have no veterinary surgeons in our service, and consequently when these noble animals become seriously sick, they almost invariably die.

"If, and undoubtedly with full warrant, the cause of the disease was looked for in the food partaken, why did not the doctor take the pains to examine the pasture ground and search for the poisonous herbs? Probably he would have found ergot, or vostilaginum, and the like.

"But if the American Army has no veterinary surgeons, then, certainly, the human physicians must make themselves familiar with the diseases of horses."

K. F. H.

This is an illustration which gives rise to the question, not only to the honorable, aged investigator, one of the most prominent pioneers of medical authorities of Europe, but also to every person with sentiment, when he pictures to himself the situation of the army horses, how it is that the Government of the United States could have so long neglected to furnish the necessary veterinary assistance for the respective troops, after the losses which originated from the irrational manner of treatment and exposure of animals that are endowed with feeling and consciousness as well as ourselves. Undoubtedly this delay is attributable

to a deficiency in the relative statute; at least I came to this conclusion after a conversation I had with a higher official at the outbreak of the war. At that time, true to my principle, I offered my services to the Union, when the official gave me to understand that farriers were entrusted with the treatment of sick horses; he therefore was not permitted to appoint regular veterinary surgeons. I could, however, if I volunteered to go to the battle-field, find opportunities enough to realize my patriotism as a professional, and probably, through the influence of one or another official, be paid correspondingly. If it were in his power he would long ere this have employed qualified veterinary surgeons, as success depends upon the ability of the horses as well as the troops. He, in addition, remarked that when the war is ended, it would require but little solicitation to dispose of the rough treatment practiced by farriers, and exchange it for the more modern, improved art of healing, based on scientific principles.

I cannot conceal that I felt somewhat offended or ashamed to hear how inferior veterinary science ranked in the military code of this country. Under these circumstances it was not difficult to decide. Remembering the proverb, a bird in the hand is better than ten in the bush, common sense bade me remain with my patrons, who had shown me many gratifying proofs of their appreciation. I also had occasion to observe that relatives, friends and pecuniary influences overbalanced the gravity of professional skill.

In the four camps within my sphere of practice, there were three empirics and one diplomated veterinary surgeon. The self-made practitioners had the preference. The regular veterinary surgeon had charge of the patients in the Covington, Ky., camp. By virtue of his power he one day had twenty-six head of glandered and suspicious glandered horses destroyed, at least two-thirds of which were characterized by the three chief diagnostic symptoms, as I convinced myself, by examining the cadavers superficially, which were lying scattered about a half-acre space of ground; the rest belonged to the category of the suspicious. Notwithstanding the lesions in the lungs were not at that time, as

to-day, universally regarded as a pathognomonic symptom of glanders, it would have been an easy matter to detect the presence of glanders by post-mortem examinations. The consequence of this transaction was that the veterinary surgeon was superseded by one of the same stripe as the other camps were blessed with, and presumably without undergoing such an examination as Capt. Leib put to his horse doctor, which, by permission, reads as follows:

While Captain Leib, U. S. Quartermaster, was very busy shipping some horses and wagons to Cumberland, he was interrupted by one of his clerks, who said: "Captain, here is a list of the medicines the new horse doctor wants."

The Captain took the paper, and glancing over it, exclaimed:

"Angle worm oil! Where is the horse doctor?"

"Here I am," answered a diminutive son of Erin from the crowd.

Captain—"Are you the horse doctor who comes so highly recommended?"

Doctor—"Faith I am, sur."

Captain—"Have you had much experience in the treatment of diseases of the horse?"

Doctor—"Yes, sur, a great dale."

Captain—"Where?"

Doctor—"In Ireland; in the ould country."

Captain—"Have you treated horses since you have been in this country?"

Doctor—"Yes, sur, a great dale at Wiston. The farmers always called me, and I gave satisfaction."

Captain—"For what diseases do you use 'angle worm oil?'"

Doctor—"Faith, yer honor, it's mighty good for the horse."

Captain—"Are you familiar with the anatomy of the horse?"

Doctor—"What is it yer sayin?"

Captain—"Can you tell me the difference between pneumonia and lung fever?"

Doctor—"Don't know, sur. They may be all the same for what I know."

Captain—"How is a horse affected by lung fever?"

Doctor—"I—I—sure, sur—I—like he had the distimper—a running at the nose and mouth like."

The captain smiled, and sending for his cashier, said:

"Mr. Steel, pay off the new horse doctor; he won't do."

I do not venture to say that the previous mentioned doctors were any better or worse than Capt. Leib's, but one of them declared that no glandered horse could be found in the whole army; still, among the condemned ones which were sold about a week or two later at auction in Cincinnati, at least one third were affected with the disease. The speculative purchasers thought that they were dealing with distemper, and expected soon to be master of the disease, and calculated with all confidence upon the multiplication of their investment. Only too often it has happened that one or more of their healthy horses were inoculated with the disease, and died before it came to the turn of the pernicious U. S. C. horse. The loss that the United States suffered is unlimited. If the government would have had the condemned horses examined by a competent veterinary surgeon, and the incurable and suspected destroyed, which any intelligent individual would have done, the country's debt to-day would be considerably less. Moreover the heavy losses horseowners sustained by their stock being infected by these condemned horses, cannot be estimated. Besides we would have obviated the reproach that we unfeelingly exposed the innocent animals to their fate.

It lies in the interest of the agricultural societies, and in the authority of the Society for Prevention of Cruelty to Animals—in fact it is the duty of every individual interested in the general welfare of man and beast, to divert his attention toward the construction of laws that, when applied, will serve to prevent a recurrence of this error. By urging this purpose we would secure protection to both life and property. Who would refuse his assistance? Surely no one who remembers the stagnation of business at the time the epizootic influenza prevailed among horses.

I am aware, however, that several regiments are provided with veterinary surgeons appointed by the Secretary of War. This highly esteemed officer, Mr. McCrary, present incumbent of this important office, fulfils his duties most scrupulously, but

as there is no possibility for him to ascertain who is qualified, there ought to be a strict law passed, to appoint no others than such as are in possession of a diploma, obtained by going through a theoretical and practical course of instruction in a chartered veterinary institution, granted by a State or the United States, to confer the degree. The honorable Secretary of War would certainly approve of this movement, and cheerfully render his assistance in carrying it through.

J. C. MEYER, SR., V. S.

ANTHRAX IN CATTLE.

By C. B. MICHENER, D. V. S.

Some interesting cases have recently come under my observation, and as they repeat a similar experience of last year, I will lay them both before the readers of the REVIEW. On the morning of June 6th, 1878, I was called to see some young cattle, the property of Watson Fell, Buckingham Township, Bucks Co., Pa., which were dying under very singular circumstances.

Under the attention of a local "cow-doctor," a yearling and a two-year-old heifer had died, and as the "doctor" could not give any clue as to the nature of the disease, its causes, cure or prevention, I was then sent for to see the herd.

Found a beautiful heifer, two years old, and in good condition, presenting the following symptoms: Head held low; ears drooping; pupils dilated; seemingly half asleep, with a slight desire to support the head upon or against some object, as though it was too heavy to hold. The breathing was somewhat accelerated; pulse soft, rapid, and difficult to count; the bowels were inactive, and urine scanty. The symptoms rapidly increased in severity until toward night of the same day, when death closed the scene. An hour or two before death the animal became delirious, would walk, or rather stagger forward against some object which she would press her head against, until forced away.

She finally fell down, struggled and bellowed until she died. The two preceding animals that had died showed similar symptoms, and, like this one, lived only about twenty-four hours from the time that they were noticed to be sick.

The farm where these cattle were kept is a rolling, well-drained red shale, free from noxious weeds or plants, and the water is as fresh and pure as crystal. Everything, in fact, is kept scrupulously clean and neat.

The post-mortem lesions which this case revealed were the same, the owner assured me, as those presented by one of the previously sick animals that the cow-doctor "opened."

The blood-vessels were filled with a semi-coagulated and very dark-colored blood. The liquor sanguinis was of a dark, muddy tint, and discolored the hands but slightly. The serous membranes everywhere were studded with petechiæ, and the ventricles of the brain contained a small amount of serum. The lungs were slightly congested; liver healthy; while the spleen and kidneys were darker than in health. The abomasum presented patches, of different sizes, where the mucous coat was entirely destroyed. The intestines from the stomach to the rectum were denuded of their mucous membrane, and were dotted here and there with small, tubercular-like bodies which, when cut into, exuded pus. (I sent you a specimen of these intestines, and their contents, at the time.)

On June 4th, 1879, I was sent for to see some cattle belonging to Peter Todd, near Lambertville, N. J. A two-year-old steer was found dead in the pasture that morning, and a yearling was showing sick. These animals were apparently well the previous night. The land in this instance is somewhat heavy or clayey, having a thin soil.

This stock had been at pasture, day and night, for some days.

The sick animal was droopy and stupid; slight aqueous discharge from nose and eyes; breathing accelerated; bowels costive; pulse eighty-five, soft and full; temperature 103° Fahrenheit. This animal died about forty-eight hours after first being noticed sick.

I did not have an opportunity to hold a post-mortem exami-

nation in this case. The steer, which was found dead in the field when I saw it, was enormously tympanitic, and a bloody discharge was issuing from the anus and nostrils. Emphysematous swellings were noticed on the neck and shoulder. The blood presented exactly the same lesions as those described in the previous post-mortem. On account of the exceedingly putrid odor given off by the carcass, I made a very hasty and, necessarily, imperfect examination.

Petechiæ were noticed on the pleura, pericardium and peritoneum. The spleen was enlarged to twice its normal size, and was very much congested. On looking at the bowels externally, they presented a dull, heavy, leaden hue, and were semi-transparent. Like the preceding case, the mucous lining was entirely destroyed, and the contents of the intestines were of a yellowish cast, fluid, and contained numerous flakes of mucous membrane. These small, knotty, tubercular points were observed here, also.

In neither of these attacks did I pay any particular attention to treating the sick, but bent all my endeavors toward preventing fresh developments of the disease. The first step taken was, to change the habits of life; if, as in Fell's herd, the cattle had been kept up, and fed dry hay and cob-meal (corn ground on the ear), I ordered them out on grass; if, as in the last mentioned cases, they were at pasture, I had them housed, and fed hay and some grain. Carbolic acid and fresh lime were placed about the stalls and cattle yards in both cases. With these precautionary measures, no more cattle died in either outbreak, and only one was noticed to complain at all. This one, a two-year-old heifer, soon recovered.

These cases are interesting—1st. That the blood lesions simulate very closely, if indeed they are not identical with, those of anthrax. 2d. From the seat and peculiarity, as well as rarity, of the principal local lesion (being very similar to those of catarrhal gastro-enteritis), and 3d. The sudden cessation of the disease when the cattle were placed under different environments and upon an altered diet.

Have I been dealing with true anthrax? And did the free use of lime and carbolic acid, in connection with placing the

animals under different conditions and diet, have *all* to do with cutting short the outbreaks?

These questions will, I trust, elicit the experience and wisdom of other and older members of the profession.

CARVERSVILLE, Pa.

THERMOMETRY IN CONTAGIOUS PLEURO-PNEUMONIA.

BY ED. DELE.

(*Continued from page* 140.)

I now pass to the thermometrical observations obtained during the month of June, of the current year.

I. The temperature of the only cow remaining at Amors, in the stable where two pleuro-pneumonia cows had died was:

June 29, 1876, 38°2. (*) Centigrade.
" 30, " 38°0.
July 25, " 38°1, milks 21 liters a day.
" 26, " 38°3, " " " " "
" 29, " 37°5.
" 30, " 39°0, less appetite, milks only 14 liters.
" 31, " 39°2.
Aug. 1, " 39°1.
" 2, " 39°5—16½ liters of milk.
" 3, " 38°5—18 " " "
" 4, " 38°8—19½ " " "
" 5, " 38°1—19 " " "
" 6, " 37°5—19½ " " "
" 7, " 40° at 11 o'clock, 38°6 at 4.30 P. M., milks 18 liters.
" 8, " 38°7 and 38°5—18 liters.
" 9, " 39°2—milks 19 liters.
" 10, " 38°9—19½ liters.
" 11, " 38°6—
" 12, " 38°4—20¼ liters.
" 14, " 37°8.
" 16, " 38°0.
" 18, " 38°0.

* To convert Centigrade into Fahrenheit, multiply by 9, divide by 5, and add 32; or, multiply by 1.8, and add 32.
Example:—20°x1.8-|-32=68°F.
38°x9=342, divide 5=68.40-|-32=100.40.

II. Cole, milkman at Borgerhout. The 29th of June, day of my only visit, I noticed in a cow pleuro-pneumonia to the last period a temperature of 38°5—killed the same day. In two others which had stabled with her, it was in one 37°5, in the other 38°5. These animals were healthy. I lost sight of them.

III. Voets, milkman at Borgerhout:

	No. 1.	No. 2.	No. 3.	No. 4.	No. 5.	No. 6.
Aug. 11, 1876.	37°5	37°2	39°0	40°0	40°5	38°0
" 12, "	38°9	37°8	39°1	40°6	41°1	37°8
" 13, "	38°1	38°0	39°5	40°7	40°6	
" 14, "				40°3	40°5	
" 15, "				(*)	40°2	
" 16, "	37°8	38°0	38°8		40°5	38°5
" 17, "	38°4	37°9	39°8		(†)	38°0
" 19, "			38°8			
" 21, "	40°7	37°4	38°4			38°2
" 22, "	40°6					
" 23, "	40°1	37°8	38°2			37°7
" 24, "	39°3					
" 28, "	38°8	38°5	38°4			38°1
" 30, "	39°0	37°9	38°2			38°8
Sept. 2, "	38°4	37°8	37°9			
" 8, "	37°9	37°8	37°7			
Oct. 1, "			(‡)			40°8
" 3, "		37°5				40°5
" 5, "	37°5	37°7				(¶)
" 9, "		37°5				
" 18, "	(§)	38°0 (‖)				

NOTES.—No. 5 gives more milk the 12th than the 11th of Aug., (6 liters). No. 5 gives more than 6 liters the 13th of Aug.; No. 4 ½ liter a day. The 14th of Aug., No. 4 gave 1 liter, No. 5 from 6 to 7.

In No. 3, the milk increases the 19th, 21st and 23d of Aug. It diminishes 3 liters the 21st of Aug. in No. 1, which gives on the 24th, 7½ liters, the 26th, 9 liters, the 27th, 11 liters, and 15 liters the following days.

No. 6 is sick since Aug. the 25th.

(*)Killed Aug. 14th. (†)Killed Aug. 17th. (‡)Cured. (‖)Healthy, sold and slaughtered. (§) Cured. (¶)Killed Oct. 3d.

IV. Marcellis, milkman at Borgerhout:

Dates.	No. 1.	No. 2.	No. 3.	No. 4.	No. 5.
Aug. 14, 1876.	38°2	38°0	39°5	40°5	40°4
" 16, "			37°9 (*)		
" 17, "	37°9	38°0	40°1		
" 19, "	37°9	38°0	39°5		
" 21, "			41°2		
" 23, "			37°9	(†)	(‡)
" 28, "		40°2	(‖)		
" 30, "	38°0 (§)	40°0 (¶)			

Notes.—No. 4 gives no milk Aug. 14th.

No. 5 gives 6 instead of 10 liters on the 16th. The quantity of milk is less the 10th in No. 3, diminished on the 17th, it returns to 10 liters the 21st.

In No. 2, 5 liters less are given on the 25th of Aug.

V. Lawreys, milkman at Borgerhout:

Dates.	No. 1.	No. 2.	No. 3.	No. 4.	No. 5.	No. 6.
Aug. 21, 1876.	38°2	38°1	39°0	37°5	(**)	37°9
" 23, "		38°3	(††)	37°5		37°8
" 28, "	38°6	38°4		37°6		37°5
Sept. 2, "	37°6	38°0		37°5		37°5
" 8, "	37°5	39°3		37°5		37°8
" 13, "	38°5	(‡‡)		37°5		38°2
" 28, "	40°5			37°5		37°5
" 29, "	40°5					
" 30, "	41°3					
Oct. 3, "	40°2			37°5		37°5
" 5, "	40°2			38°2		37°5
" 7, "	40°0			38°1		38°5
" 8, "						38°2
" 9, "	40°8			37°9		37°7
" 10, "	39°8			37°5		38°0
" 11, "	40°6			38°2		38°2
" 12, "	40°2			37°5		38°1
" 13, "	41°0			37°8		37°5
" 14, "	40°9			37°8		38°4
" 15, "	39°9			37°5		37°5
" 16, "	40°5			37°5		37°5
" 17, "	40°4			37°4		38°2
" 18, "	40°4			37°0		37°5
" 19, "	(‖‖)					

(*) I think it noted 39°7 instead of 37°9. (†) Killed Aug. 14th. (‡) Killed Aug. 16th. (‖) Killed Aug. 25th. (§) Killed healthy, Sept. 1st. (¶) Killed Aug. 31st.

(**) Thermometry impossible; she had recovered. (††) Killed. (‡‡) Killed Sept. 26th. (‖‖) Killed Oct. 18th.

Dates.	No. 4.	No. 6.
Oct. 20, 1876.	37°5	37°5
" 22, "	37°6	37°2
" 24, "	37°7	37°4
" 26, "	37°6	37°1
" 28, "	37°6	37°2
Nov. 5, "	37°0	37°1
" 15, "	37°7	37°2
" 23, "	37°2	37°2

NOTES.—The 13th of Sept., No. 4 gives one liter of milk less than usual.

The 27th of Sept., No. 1 gives 27 liters of milk a day.

The 29th and 30th, No. 1 gives 12 liters; Oct. 6th, 13; 5th 16; 7th, 17; 9th, 16; 10th, 16; 11th, 14; 12th, 13; 13th, 12; 14th, 11¼; 15th, 10; 16th, 10; 17th, 10; 18th, 6; 19th is almost dry.

Oct. 5th, No. 4 gives 18 liters; No. 6, 16, and 17 the 7th of October.

VI. Wouters, milkman at Antwerp:

	No. 1.	No. 2.	No. 3.	No. 4.	No. 5.	No. 6.
Oct. 19.	38°1	39°8	38°1		38°2	38°2
" 20.		39°6				
" 21.	incld.†	(*)	incld.	incld.	incld.	incld.
" 24.	38°1					37°8
" 28.	37°8		37°2			37°1
Nov. 4.	37°5		37°5			37°8
" 11.	37°0					37°0
" 18.	31°1					
" 23.	Thermometry impossible in all.					

NOTES.—The 24th of Oct., No. 1, 5 and 6 give each 15 liters; No. 4, 10; No. 3, 6.

Nov. 11th, No. 1 gives 5 liters less—I gave her a cathartic.

Nov. 15th, No. 1 is cured.

Nov. 18th, No. 1 gives 7 liters, and keeps increasing gradually.

VII. Verstraelen, milkman, at Borgerhout:

	No. 1.	No. 2.	No. 3.	No. 4.	No. 5.	No. 6.	No. 7.	No. 8.	No. 9.	No. 10.
Nov. 2.	37°0		38°3		37°(**)	38°3				40°0
" 3.			38°1			37°6				(††)
" 4.			38°2		37°6	38°2				
" 18.			37°5		37°5	37°5				
" 23.			37°8		37°0	37°5				

(*) Killed Oct. 20th. † Inoculated.
(**) Killed Oct. 20th. (††) Killed Nov. 2d.

NOTES.—Nov. 2d, No. 3 and 6 are not as well as No. 1.

Nov. 3d, No. 3 is dry in the evening.

Nov. 4th, she gives about 9 liters in the day.

Nov. 18th, No. 5 is well.

VIII. Van de Zande, cattle dealer at Borgerhout. In one of his cows (No. 10) the temperature on the 3d of Nov., was 38°9. She gave on the 2d, 4 instead of 10 liters of milk. Symptoms of indigestion—sold. She is killed, and at post-mortem shows a beginning of hepatization. A dog ate her lungs and I could not inoculate the other cows.

During the absence of Van de Zande, a new cow was placed in the stable, between No. 1 and No. 2. At my first visits, the cows were placed as follows:

	No. 9.	No. 8.	No. 7.	No. 6.	No. 5.	No. 4.	No. 3.	No. 2.	No. 1.
Nov. 11.	38°0	39°0	37°8	37°5	38°0	38°2	39°2	37°5	37°0
" 14.							40°5		
" 15.							39°5		
" 18.	37°5	37°5	37°5	37°6	37°4	38°3	38°3	39°2	38°4
" 20.						40°0			
" 21.	37°8		38°0	37°0	38°3	killed.	38°0	38°5	37°7
" 23.	38°5	37°7	38°2	37°2	37°5		40°6	38°5	38°0

Nov. 11th, No. 8 had a little œdema of the mammæ; she has given milk from one teat only for a long time.

No. 3 is lame on the left hind leg, gives 27 liters.

The 18th of Nov., No. 8 is healthy.

The 17th, No. 4 is isolated, as she does not feed; the 18th she eats and milks 10 liters instead of 15—18 the days before.

The 20th, respiration 42, pulse 96, palpitation of the heart, chills, no grunt, no dullness on percussion. She is sold and slaughtered. On post-mortem is found hepatization to the second degree. The virus is used to inoculate No. 1, 2, 5, 7 and 9. No. 3 has calved during the night. No. 6 and 8 are fat.

The 23d of Nov., No. 3 has a temperature of 40°6. She milks as before, 27 liters.

IX. Van Hout at Borgerhout:

	No. 1.	No. 2.
Nov. 13.	39°9	41°2 Killed.
" 14.	40°5 Killed.	

No. 1 is sick since three days—7½ liters of milk instead of 23 on the 13th.

No. 2 is diseased since ten days—2 instead of 15 liters. She gives 6½ on the 14th.

X. Berkmans, milkman at Berchem:

Dates	No. 1.	No. 2.	No. 3.	No. 4.	No. 3.	No. 2.	No. 1.
Nov. 16.	39°3	died	37°8	38°5	killed	37°6	38°0
" 18.	37°4		38°0	38°1		37°0	38°4
" 23.	37°1		38°5	37°5		38°0	37°3

No. 1 has been sick, probably with pleuro-pneumonia, six weeks ago. She then gave no milk, now she milks 16 liters.

XI. Mortens, milkman, at Borgerhout:

A cow—temperature 39° the 20th of November. No pleuro-pneumonic symptoms. I advised to sell her. On the 23d I saw her again. On account of her ugliness I could not take her temperature. She gave 5 liters instead of 3 that she milked on the 20th. She probably had phthisis.

XII. Smith, milkman, at Borgerhout:

A cow, single in a stable, temperature 38°5. No symptoms of pleuro-pneumonia on the 20th of November. I advised to send her to the slaughter-house. She is killed the 23d. To my great surprise her lungs exhibited the lesions of pleuro-pneumonia.

XIII. Noenincky, at Berchem. August 2nd, 1876, a pneumonic cow, temperature 41°. Killed the next day; had previously been with a pleuro-pneumonic cow.

XIV. Delaet, at Anvers, August 3d, a cow which has not delivered is sick, and has a temperature of 37°7.

XV. Mortens, at Borgerhout, August 8th, non-delivered cow, temperature 38°2.

As can be seen, my observations are quite numerous. Let us see now the significance of the figures obtained on animals suffering with pleuro-pneumonia, and on those affected with other diseases.

1st. In pleuro-pneumonic cows I have noticed:

41° in No. 1, 13th observation,
41°1 " " 5, 3d "
41°2 " " 3, 4th "
41°2 " " 2, 9th "
41°3 " " 1, 5th "

In these five animals the diagnosis could be made without the thermometer, as the disease was at the *period of acme.* All were killed.

I observed the following temperatures:

1st. 38°5 in cow No. 1, 2nd observation, killed by my order.

2nd. 38°3, raised to 40° in two days by cow No. 4, 8th observation, slaughtered. I did not make out pleuro-pneumonia, the 18th and 19th when the temperature was 38°3, but was suspected on the 20th, the thermometer registering 40°.

3d. 38°8 August 30th, thermometer raised to 40°8 Oct. 1st, (No. 6, 3d observation). Killed by my order.

4th. 38°9 August 12th, temperature raised to 40°7 and down again to 38°9 (No. 1, 3d observation). Animal got well.

5th. 38°9 the 3d of Nov. (No. 10, 8th observation). This cow, which had been sick but one day, and in which I did not suspect pleuro-pneumonia, was killed, and exhibited hepatization of her lungs.

6th. 39°3 the 16th of Nov. (No. 1, 10th observation), was visited only when in convalescence.

7th. 39° the 4th of Aug. (No. 3, 5th observation). Disease far advanced. Animal killed by order.

8th. 39°5 the 20th of Nov. (12th observation). Slaughtered the 23d.

9th. 39°5 the 14th of August; later rising to 41°2. Killed by order.

10th. 39°8 the 19th of October (No. 2, 6th observation). The temperature came down to 39°6. Destroyed by order.

Consequently, the periods of *invasion* and of *increase* are accompanied with a rise in temperature to 41°.

To define exactly these two periods, is difficult. It seems to be 40° for the period of invasion and 41° for that of increase.

The period of *invasion* is not easy to recognize, the symptoms observed can belong to other diseases, especially to indigestion. The period of *invasion* was observed at post-mortem in No. 10, 8th observation. and No. 1, 12th observation, and also by the continuation of the disease in No. 4, 8th observation. Killed the 20th.

The period of increase was observed in cow No. 6, 3d observation. In her, the temperature, which on the 30th of August, was 38°8, rose to 40°8 the 1st of October. In No. 1, 3d observation, the temperature was 38°9 the 12th of August, on the 21st it marked, after some oscillations, 40°7 ; in No. 3, 4th observation, the thermometer on the 14th of August, registered 39°5, then 40°1 the 17th, and 41°2 the 21st. In No. 4, 8th observation, for two days the temperature was 38°3 and 40°.

In No. 1, 2nd observation, the instrument registered 38°5. Growing weak. She was killed the 29th of June.

No. 2, 6th observation, temperature 39°. Killed the 21st of August.

No. 2, 10th observation, temperature 39°3. In way of recovery. Two days later she registered 37°4.

No. 1, 3d observation, the temperature, on the 21st of August, from 40°7 began to go down, in consequence of convalescence. On September the 8th, it is but 37°0.

No. 3, 3d observation, the temperature is 39° on the 11th of August, 39°5 the 13th, then comes down to 37°7 on the 8th of September. Cow cured.

What is the meaning of that diminution of the temperature after the marked increase ? Either a return to health (No. 2, 10th observation, No. 1, 3d and No. 3, 3d), or approaching death (No. 1, 2nd observation, No. 3, 6th). It was then the period of *decline*.

From the above, let us conclude that the *invasion* of pleuro-pneumonia, not easy to recognize, is accompanied with an increase of temperature. This continues during the period of *increase*, and is at its maximum at the period of acme. From that it diminishes and indicates the period of *decline* towards recovery, (slow diminution) or towards death (probably more rapid. I say probably, not having had the opportunity to confirm it by leaving the animals die).

But there is a period preceding that of *invasion;* it is the *incubative* stage. It cannot be recognized or suspected by the use of the thermometer. Here is the proof: Cow No. 4, 8th observation, had a temperature of 38°3 the 18th of November; she was

isolated, as being indisposed. The 20th the temperature was 40°. Killed that day. I found pulmonary hepatization.

Cow No. 10, 8th observation, which had been sick but twenty-four hours, presented, the day she was killed, a temperature of 38°9. The disease had not been made out during her life.

Amongst bovine animals, affected with other diseases than pleuro-pneumonia, I have observed cases where the temperature remained unchanged (cow No. 1, 14th and 15th observation). These cows were sick from not cleaning after delivery.

Cows No. 3, 5 and 6, especially No. 5, 7th observation, ate less and gave less milk. Their food was sour. They recovered after a few days. Their temperature remained unchanged. But I have observed some cases in which the thermometer had registered high in a marked manner. No. 8, 8th observation, temperature 39° the 11th of November, and which had an œdema of the mammæ, recovered quickly, and the 18th of November, had a temperature of 37°5. No. 3, 8th observation, temperature 39°2 the 11th of November, 40°5 the 14th, 39°5 the 15th, 38°3 the 18th, had only 38° the 21st. This cow had just calved, and gave 27 liters of milk.

Another, which was in a stable where the pleuro-pneumonic virus had been thrown off by two sick animals, became sick with indigestion by too rich feeding. Her temperature rose to 39° the 30th of July, to 39°5 the 2nd of August, to come down the following days, and on the 7th it reached 40°. She got well a few days later.

Let us then conclude that the increase of temperature cannot establish a distinction between pleuro-pneumonia and other inflammatory diseases. It seems, however, that it rises more in pleuro-pneumonia. One then may, at the most, by the increase of temperature in a cow which has been exposed to the pneumonic virus, suspect or fear the invasion of the peri-pneumonia.

I will add that, generally, the veterinarian is called only when the disease has reached a period of increase, or of acme; it is for that reason that I always noted a temperature of 39° and 40°.

Sometimes the veterinary surgeon is called at the last period, when the beast is about dying, and almost never when it is about

recovering. I exceptionally have noted then the temperature (No. 1, 10th observation). Very seldom is he called in the *invasion* stage, which is not surprising, as the disease is not recognized. Nevertheless, I was called twice in that period (8th observation); the first time, November the 3d, for a cow, No. 10, which was sick since the day before, and whose temperature was 38°; the second time the 18th of November. for No. 4, sick since the 17th, and presenting a temperature of 38°3. Lastly, I visited a cow (12th observation), with a temperature of 39°5 and in which the disease was not made out till she was slaughtered the 23d.

(*To be concluded next number.*)

EDITORIAL.

ERROR OR MISUNDERSTANDING.

When, through the kindness of Prof. Walley, "*The Four Bovine Scourges*" came to us and was placed in our hands for review, it was with pleasure that we fulfilled the agreeable task, calling the attention of our readers to that most excellent work. But as we did so it became our duty to take notice of a part of the book, which was the report of Prof. McEachran to the Canadian government relating to the existence of pleuro-pneumonia in the United States. Scarcely had the REVIEW reached its subscribers when letters came from all directions to different gentlemen, some from Canada, some from Pennsylvania, and before we had time to think what all this trouble could mean, harassed by questions from here and there, came the two letters from Prof. McEachran and Mr. Gadsden addressed to the REVIEW, with special desire to have them printed at once.

Well, now, the REVIEW is a modest little periodical, and she tries to do her work in a quiet way, and it is unnecessary to try to give her a bad name or an *unenviable reputation for ungentlemanly attacks*, for she has as yet been, and we hope will remain, innocent of such a charge.

We have already replied to the letters in the pages of the RE-

VIEW, and now we will ask the attention of our readers a moment for further explanation. The extracts in the review of the report of Prof. McEachran which gave rise to the storm of attack against the enviable reputation of the REVIEW, and charges of *gross misrepresentation* towards us are these: 1.—"Accompanied by Mr. Gadsden, I visited New York and communicated with the Principal and Professors of the American Veterinary College, *none of whom had any experience of the disease, and doubted the correctness of the rumors of its existence.*" It is true that we, personally, had not on hand a case of pleuro-pneumonia to show at a moment's notice; these things are not always ready to order; but is that a proof that we had no experience of the disease, or that we doubted its existence? In our professional relations with veterinarians from New York State, in our meetings of veterinary societies, in our private inspection of slaughter houses in New York City, we have often received self-evident proofs of the disease; and it is difficult to understand that under such circumstances *we have had no experience of the disease, or that we doubted its existence.*

The second extract is that "Prof. Liautard, who up till now was sceptical of its existence," etc. We must acknowledge that we could not but be sceptical as to the *extent* of the disease in Blissville. We did not expect to find it so serious where it existed, and we believe that everybody present there, even Prof. McEachran, must have been surprised; but we leave to our readers the question how could we have been sceptical as to the existence of the disease, when, as we have already said, we had reports now and then from veterinarians, our friends and state colleagues, when the subject was now and again discussed at our meetings, and when we had seen post mortem lesions, which *our past experience* had made as familiar to us as those of contagious pleuro-pneumonia?

When we printed the extracts which have so seriously aroused the feelings of our friend, Prof. McEachran, it was not with the intention of taking from him the credit he deserves for the work he has so ably and faithfully performed. To him we know, as an officer of the Canadian government, is due the honor of forcing

the American government to acknowledge that the notices veterinarians in this land in general, and the little REVIEW in particular, had so repeatedly given were correct, and that these contagious affections did exist in different States; but we could not refrain from mentioning the extracts already referred to, not for our personal satisfaction, but to correct the wrong impression which said extracts must have carried, and as we were told did carry, to others less posted with our constant endeavors to elevate the veterinary profession in the United States.

PLEURO-PNEUMONIA IN PENNSYLVANIA.

Amongst the good news from Pennsylvania, the following is received through our exchanges:

"Dr. Gadsden, V. S., has given the information that the proper authorities are at work stamping out contagious pleuro-pneumonia in Pennsylvania, and are paying the farmers for the stock killed. Any farmers believing that the disease exists on their farms, and desiring to get rid of it, should address the Board of Agriculture at Harrisburg, &c., &c."

We are not informed of the veterinary authorities who will belong to the pleuro-pneumonia commission, but certainly our most esteemed friend and colleague, Dr. Gadsden, might fill a position there to which he is justly entitled..

REPORTS OF CASES.

A CASE OF DYSTOCIA.

By F. S. BILLINGS, V. M.

On the 28th of June, early in the morning, we were suddenly called to visit a mare, in the difficulties of labor. The mare was an old favorite with its owner, who was holding her for the sole purpose of keeping her memory green by means of her offspring.

The pains began in this mare at about seven o'clock of the previous evening. The watchman, who, by the way, knew

nothing of horses, paid little attention to her. He observed, however, that at about eleven o'clock in the night, the mare was quiet and eating. About twelve the troubles of the mare again began, increasing very much in severity, the unfortunate mare throwing herself about in various directions. The watchman, not knowing what to do, called up the numerous drivers of the establishment for consultation. The result was as usual; the experienced "cow leech", of the neighborhood was sent for. No relief being afforded, it was decided to call the owner at about six o'clock in the morning. The gentleman came immediately for us, and, in company with our friend Mr. Gerth, we at once proceeded to the scene of battle. We found the mare down, much exhausted, bnt occasionally rising, throwing herself from one side to the other of the box, and then upon the floor. Her struggles were so violent that we found it necessary to administer chloroform. From the vulva protruded the fore-feet of the foal. Upon following them up along the vagina, one came in contact with the body of the foal, the head not being directly felt, nor was it in a reverted position. Upon slowly withdrawing the hand, the curvatures of the inferior-maxillary were distinctly felt above the wall of the vagina. We then proceeded to make an examination *per rectum*, and found the anterior part of the head of the foal protruding into that intestine. The struggles of the mare having been moderated by the chloroform, it was no difficult task to push the foal forward, by means of which it was possible to dip the nasal extremity into the vagina. The foal was dead. The birth was artificially completed in a few moments. On examination of the recto-vaginal ruptures *post-parvum*, the cavity was found to be the size of a man's hand, but the edges were in a more or less intimate degree of opposition. The condition of the patient justified the most unfavorable prognosis. Thoroughly exhausted, with ice-cold extremities and a weak fluttering pulse, she lay upon the straw of her stall, even after the effects of the chloroform had apparently passed away. Notwithstanding the most exact and continued applications of anti-pyretic and antiseptic, in unison with appropriate stimulant treatment, she passed away in about twenty hours from time of delivery. Our sole reason for report-

ing this case is to add one more to the already extended list of fatal results following the interference of *raw empirics*.

F. S. B.

Boston, July 8th, 1879.

AN INTERESTING CASE.

By F. S. Billings, V. M.

Death of a horse from non-oxidization of the blood, by reason of heat and over-driving.

On Friday, July 5th, in company with Mr. J. Gerth, Jr., a student of the American Veterinary College of New York, we paid a visit to the Abattoir, and on our return over the well-known "mile ground" of Brighton, we had a friendly brush with parties unknown. Our own horse, being considerably the faster of the two, the party driving the other began the usual tactics of whipping and running his horse, in order to get by us. We ourselves pulled our horse to a walk, and continued at this pace for about a mile. On coming within sight of the so-called "Run," our attention was called by Mr. Gerth to the horse of our unknown friend, which had fallen to the ground, and was in the last struggles of life. The owner, deeply grieved, kindly placed the cadaver at our disposal for necroscopical purposes. We made the necroscopy at Ward's Wharf at six o'clock, P. M., Dr. Stickney, of Boston, honoring us with his presence. Mr. Gerth kindly removed the organs for us. The laryngeal and pharyngeal regions were in a highly congested condition, the mucosæ being dotted with numerous ecchymoses. This condition of the respiratory mucosa extended along the trachea into the bronchial ramifications of the lungs. The mucosa itself was swollen, and on cross-section displayed a high œdematous condition. The glottis presented the well-known phenomena of "spasmus-glottidis." No erosions or ulcerations, or any evidences of mechanical injury were present. Upon making a cross-section of the lung, the same was black-red in color; a thick, blackish-red fluid oozed from the cut vessels over the sectioned surface. Upon scraping away the same with the scalpel, the parenchyma appeared dry, thereby de-

monstrating that capillary hemorrhage into the lumina of the alveola had not taken place. Pieces of the lung thrown into water floated upon its surface. The cavities of the heart were nearly empty, no coagulæ being found in either of them. The peculiar contracted condition of the larynx under such circumstances has been, we think, too often looked upon as causus morbi. In truth, the restricted circulation in the lung, the non-oxidization of the blood, with the consequent accumulation of $C.O_2$, gives rise to irritation of the nervous centra controlling the larynx. This, with the swollen condition of the laryngeal mucosæ, presents ground of obstruction to the entrance of oxiginated air into the alveolæ of the lungs, the lumina of which are already greatly diminished by the over-distended capillaries. In such cases the real causus morbi is the accumulated $C. O_2$.

The day on which the accident occurred was painfully hot and sultry. The horse in question had only recently come to our city from Vermont, and was in no condition to demonstrate his natural speed for any distance under such untoward circumstances. The excitement into which the horse was thrown, not only from his natural desire to outspeed his competitor, as well as the not too-light application of the whip, and the strong pulling to which he was subjected, all played a part in causing his death.

F. S. B.

Boston, July 8th, 1879.

EXTRACTS FROM FOREIGN JOURNALS.

TRICHINA IN AN HIPPOPOTAMUS.

On the 10th of May, died at the Zoological Garden of Marseilles, a young hippopotamus, two years old. Since her arrival the animal has been ailing, her skin being covered with an eruption of furuncles. During the four months she was at the garden she received the best of care, but finally died. At the post mortem, a minute observation of the muscles of the back revealed the

presence of numerous trichinous cysts in large numbers, containing the trichina spiralis, cysts much larger than those found in the pig or in man.—*Gazette Medicale.*

REMOVAL OF THE INTERMAXILLARY GANGLIONS AS MEANS OF DIAGNOSIS OF GLANDERS.

Messrs. Maury and Labat, to ascertain a doubtful diagnosis of glanders, examined the intermaxillary ganglions, and found in their mass two tubercles in way of softening, and three in the state of yellowish granulation. From these lesions they concluded the existence of glanders. "The post mortem of the animal when destroyed revealed no lesions in the nasal cavities, the sinuses, the larynx or the trachea. In the lungs were found a dozen tubercles of different periods, but generally old; also some marks of pleuritic glanders."

In conclusion M. Labat states that in like cases, the examination of the ganglions after removal is an easy mode to confirm the diagnosis of a suspected case; as in the horse, the tubercle signifies neither tuberculosis nor syphilis, but glanders or farcy." —*Revue Veterinare de Toulouse.*

ON THE DISINFECTING ACTION OF CHLORINE—INOCULATION OF A DONKEY WITH THE VIRUS OF GLANDERS, TREATED BY THE GAS —COUNTER-PROOF WITH THE GLANDERS OF THE DOG.

M. PEUCH, of Toulouse.

Has chlorine gas the property of destroying the virus and its power of contagion?

As far as it concerns the virus of glanders, Renault says "No;" Gerlach, "Yes." Mr. Peuch, from late observations has a tendency to be of Gerlach's opinion.

Virus of glanders was placed in a cup hanging in the middle of glass globes filled with chlorine gas. After fifteen minutes the virus is inoculated in a donkey. At the same time some *undisinfected* virus is inoculated in a dog. In the donkey the wounds of inoculation healed rapidly, and no bad symptoms manifest them-

selves. In the dog, the wounds became inflamed and the submaxillary ganglion swollen.

Twenty days later the donkey was inoculated with the pus taken from the wounds of the dog. The symptoms of glanders made their appearance. After death all the lesions of glanders are found.

SALYCILATE OF SODA IN PNEUMONIA OF THE HORSE.

Mr. Inarbol recommends the use of salycilate of soda in the treatment of pneumonia of the horse, ʒv (five drachms) a day, in two doses. The result surpassed his anticipation. From the first day of the treatment, an improvement was noted in the patient, his respiration became easier and slower, his pulse better and fuller, the temperature lowered and an abundant diuresis took place. This improvement continued till the recovery of the animal was completed.

COOLING TREATMENT IN PNEUMONIA.

Amongst several cases of pneumonia treated by cold external applications, Prof. Zangger of Zurich, presents two principle subjects. No. 1 is a fat and strong horse, admitted to the Hospital of the Veterinary School, with 37 respirations, 80 pulsations, a temperature of 40°7C. Damp and cold applications are placed round the trunk, covered with dry blankets. Thirty-six hours after, the respiration is down to 18, pulsations 45, temperature 38°4C. No. 2, a young and robust horse, is admitted, with all the symptoms of pneumonia. 36 respirations, 68 pulsations, temperature 41°9C. After damp and cold application, all the symptoms diminished. A few hours after there are but 23 respirations, 61 pulsations, and the temperature is down 38°4C. This improvement kept on and the animal recovered.

TRICHINA IN SYRIA AND EGYPT.

A circular from the Minister of the Interior in Italy, dated February, 1879, gives official information of the existence of trichi a in swine from Syria and Egypt. A decree of the same day prevents the importation into Italy of living pigs or of their carcasses.—*Revue d' Hygiene.*

STATISTICS OF HYDROPHOBIA IN THE DEPARTMENT OF SEINE, FRANCE.

From the extract of Mr. C. Leblanc to the department of police in Paris, the number of cases of hydrophobia for 1878 was no less than 511, viz: 440 dogs, 68 sluts and 3 cats.

Amongst those 390 had the raving type, and 121 had the dumb rabies; 103 persons were bitten, viz: 67 adults and 36 children; the mortality being 30, or 1 out of about 3. 454 dogs and 24 cats were bitten. Of the dogs, 342 were killed, 112 were lost. All the cats were destroyed.—*Revue d' Hygiene.*

VIRUS OF HORSE POX FOR VACCINATION.

Dr. Pingaud has inoculated seven soldiers with the liquid of the vesicles developed upon the buccal mucous membrane of horses suffering with horse pox. Upon six of them the vaccination took well. Out of these virus was used to inoculate sixty-four men. On those the result proved magnificent in 40 men (64 per 100), the result was positive. Cows were then inoculated with the virus of the horse pox, and were used afterwards for general vaccination of the whole garrison. But what proves that the equine virus becomes weak in passing by the cow, is that the liquid of this cow pox inoculated gave only a success lower than in the former operation. Twenty-eight per one hundred instead of sixty-four proved successful.—*Bulletin Academie de Medecine.*

REGULATING THE STAMPING OUT OF PLEURO-PNEUMONIA IN NEW JERSEY.

STATE OF NEW JERSEY.

EXECUTIVE DEPARTMENT,
Trenton, June 26, 1879.

Gen. William H. Sterling:

SIR:—It has been made known to me that the infectious and contagious disease among neat cattle, called Pleuro-Pneumonia, has been brought into and exists in various counties of this State. You are therefore directed, as my assistant, charged with enforcing the law for the prevention of the spread of the disease, to prohibit the movement of cattle within the State wherever and whenever you may deem it necessary, except on permits from yourself after skilled examination under your direction.

You are also directed to compel all owners of cattle, their agents, employees or servants, and all veterinary surgeons, to report forthwith to you all cases of disease by them suspected to be contagious. When any such notification is received, or when from any source you receive information inducing you to suspect the existence of the aforesaid disease among any cattle in the State, you are directed to have the cases examined, and you are hereby empowered, when you deem it necessary, to cause all such animals as are found to be infected with said disease to be killed and buried with slashed hides.

You are directed, further, to quarantine all cattle which have been exposed to the infection of said disease, or located in an infected place; but you may, in your discretion, permit such animals to be slaughtered on the premises and the carcasses to be disposed of as meat, if, upon examination, they shall be found fit for such use. You will cause all buildings, yards and premises in which said disease exists, or has existed, to be thoroughly disinfected.

You are further directed, whenever the slaughter of diseased

or infected animals is found necessary, to determine the value of the animal or animals so slaughtered at the time of slaughter, taking account of their condition and circumstances, and to furnish the owner or owners with vouchers necessary to enable them to draw the amount from the Treasurer.

Whenever any owner of such cattle, or his agent or servant, has wilfully or knowingly withheld, or allowed to be withheld, notice of the existence of disease upon his premises, or among his cattle, or has interposed obstacles to the examination of suspected cases, you will not make such voucher. So, also, in all cases where the owner of infected cattle, or those suspected to be infected, has wilfully failed to observe and maintain a quarantine regularly imposed under these instructions and the law to which they refer. You will in such cases make no voucher for the value of the cattle of such owner, should you find it necessary to cause them to be slaughtered.

You are further directed to take such measures as you deem necessary to disinfect all cars, or vehicles, or movable articles by which contagion is liable to be transmitted. You are also to take such measures as will secure a registry of cattle introduced into any premises in which disease has existed, and to keep such cattle under supervision for the period of three months after the removal of the last diseased animal and the subsequent disinfection of such premises.

You are also authorized and directed to take such measures as in your judgment may be necessary to prevent the indiscriminate pasturing of cattle on public commons in localities where the aforesaid disease is known or suspected to exist.

I have to request that you will use your best endeavors to impress upon the owners of cattle, whether infected or not, that these instructions and the law known as the Pleuro-Pneumonia law, are in their interest, as well as that of the State in general, and that their hearty co-operation is asked and desired in carrying out the necessary measures.

It is my wish that, while the provisions of the law are made most effective and its purposes promptly and fully accomplished, this should be done in such a manner as to cause the least possible

inconvenience and injury to all concerned and a minimum of expenditures by the State.

In this spirit I further advert to certain precautions which are absolutely necessary to insure the complete and prompt eradication of the disease among cattle in the State, and which it may be difficult to enforce without the cheerful and intelligent assistance of the owners of cattle and of all good citizens.

Among them are the following:

No persons who are not employed in the care of the cattle kept there should be allowed to enter infected premises;

No animal, or even fowls, should be allowed to enter such premises, for the reason that, even when not liable to the infection themselves, they may carry its seeds to neat cattle;

The clothing of all persons engaged in the care, slaughter or rendering of diseased or exposed cattle, or in any employment which brings them in contact with such diseased animal, should be disinfected before they leave the premises where such animals are;

Persons employed in the care of infected animals should not enter stables, yards or premises where sound cattle are kept without first thoroughly disinfecting their clothing;

Manure, forage and litter upon infected premises should only be removed therefrom in such a manner and be so disposed of as to prevent the spread of infection.

You are instructed not only to take such measures as in your judgment will secure the observance of these and all similar necessary precautions, but you will also use every effort to convince those concerned that it is their own best interest to secure such observance by all means in their power.

Whenever in your judgment it becomes necessary, you are authorized, without further reference to me, to call upon the Sheriffs and Deputy Sheriffs of the townships concerned to carry out and enforce the provisions of the law and of the instructions received from me.

Very respectfully your obt. svt.,

GEORGE B. MCCLELLAN,
Governor.

BIBLIOGRAPHY.

INOCULATION PREVENTIVE DE LA PLEURO-PNEUMONIE AU POINT DE VUE PRATIQUE.

Par Ed. Dele, Medecin Veterinaire.

This little brochure is the resume of a number of close observations made by M. Ed. Dele, and of the conclusions to which he has arrived, viz: A strong advocacy of inoculation for the prophilaxy of contagious pleuro-pneumonia. After giving a full description, with tables, of the different experiments and observations he made, and also a few remarks about the process of inoculation, the choice of the virus, and the local and general effects obtained, Mr. Ed. Dele concludes as follows:

Pleuro-pneumonia has *generally appeared* in a herd in *one cow only*, seldom upon two at a time, and in this case together. About *three* weeks after one, two or three new cases have appeared, one after the other, and then other cases show themselves at different intervals.

The period of incubation has then been, in the minimum, about three weeks.

When two cases made their appearance a few days apart, we have inferred that a case anterior, of about three weeks, had already existed.

When pleuro-pneumonia makes its appearance in a herd, the first case is never recognized at first, that is, in the first period. When other cases are present, the previous existence of known cases may engender suspicion of existence of the disease.

Pleuro-pneumonia is introduced into a stable by contagion. Spontaneous development, if it exists, is the exception.

Pleuro-pneumonia is always contagious, though some bovine are refractory to the virus.

Pleuro-pneumonia, when propagation has not been prevented, is *constantly* spreading from stable to stable, where they communi-

cate or open on a common yard, and has almost *always* spread when stables are separated by a wall.

In *infected* stables where *inoculation of healthy animals has not been done, never* did the disease stop after one single victim. 83 per cent. became pleuro-pneumonic.

In *infected* stables where healthy animals were *inoculated, frequently* the disease stopped *entirely.* When it continued, the mortality was much reduced.

Inoculation has been followed by valuable preventive effects only when practiced from the time of the first case of sickness seen in the stable.

The virus produced by the first pleuro-pneumonic cow is absorbed first by one, two, seldom three others, which, in their turn, produce and exhale the virus, which gives rise to a new series of victims. The effects of the virus are visibly manifested after about three weeks; there is then pulmonary hepatization. In practising inoculation, it prevents hepatization, in a manner we cannot explain. Inoculation done during the latent period, or when the disease manifests itself externally, has not stopped the disease.

In *non-infected* stables, we *never* introduced the disease by inoculation.

Inoculation *can* be performed at all times.

The *most ordinary* consequences of inoculation are:

(a), Limited swelling of the tail, round the wound, which gives rise, often a long time after, to purulent discharge; (b), frequently general functional disturbances.

Sometimes the swelling did not appear, even when the inoculation was repeated. Bovine, under these conditions, are refractory.

Exceptionally, we have had an *excessive* swelling, extending above the base of the tail. This always subsided by surgical and medical attention. *Not one animal has succumbed to it.*

Finally, inoculation *is indispensable to protect bovines, which have cohabited with or near others affected with pleuro-pneumonia; that is to say, which have been, or may have been exposed to the influence of the virus, providing it is performed at the moment the animals have been exposed to the virus.*

DISEASES OF LIVE STOCK.

By L. V. Tellor, M.D.

This is the title of a work written by Dr. Tellor and published by Dr. D. G. Brinton, 115 South Seventh Street, Philadelphia.

To write a book on the diseases of live stock, embracing as this work does 460 pages, is a pretty difficult task. And when we find that it contains anatomy, physiology, hygiene, therapeutics, surgery and pathology of the horse, cattle, sheep and swine, to many it will be looked upon as an impossibility. We have had so many of those works, so-called popular books, that this last is likely to be classified by many like its predecessors. Popular works we do object to, especially in veterinary medicine. They are, generally speaking, of little use. And in this country, where veterinary science is so much behind the age, we would not consider them otherwise than as the means of pushing on or elevating quackery, rather than to help veterinary medicine and agriculture. Still, the work of Dr. Tellor, though a popular work, we have found far better than any which has been written before it, and if the doctor had only left out some of the notices he obtained from some of the *works* he has consulted, it would have been none the worse for it.

CORRESPONDENCE.

To the Editor of the American Veterinary Review:

Sir—Seeing that you have allowed four months to pass without attempting to contradict my official report, in which I state a fact as I found it and can amply verify, I was surprised and humiliated to read your remarks at page 170 of the July number of the Review.

I will not, however, resort to the same disreputable plan of replying "you're another." I merely repeat that all I said and more is true.

The following are the facts: On the 16th of January last, I telegraphed from Ottawa to Prof. Liautard to meet me in New York, which he did on the 18th. He could not give me any information on the subject of *pleuro-pneumonia* in New York, Long Island or New Jersey, and knew of no cases, but promised to make such enquiries as would discover the disease if it existed during my absence. I returned in eight days, and as I knew that a meeting of the New York Medical Association had taken place on the Monday, when Prof. Liautard would have an opportunity of making enquires, I was disappointed to be told that he could not direct us to a single case. I was accompanied by Alexander Lockhart, M.R.C.V.S. and J. W. Gadsden, M.R.C.V.S. We saw Dr. Liautard, Dr. Robertson and Mr. Holcomb. Not one of them could direct us to a case, and I quite agree with Mr. Gadsden in saying we would have left there without seeing any case if I depended on our friends at the American Veterinary College. They either wished to deceive us or they knew nothing of the disease, and if they spoke the truth they one and all *were sceptical* of its existence.

On the authority of Mr. McLean, of Brooklyn, I have it that Prof. Liautard did not make any enquiries at the meeting, and only called him back after it was over to ask him if he could show him any cases of pleuro-pneumonia, without mentioning my name to any one. I will leave it for Messrs. Gadsden, Lockhart and McLean to prove the correctness of these statements.

It is to be regretted that the only organ of the profession in America should attain an unenviable reputation for ungentlemanly attacks on those members of the profession who do the most for its elevation.

By inserting this with the inclosed letter from Mr. Gadsden, you will oblige your's truly,

D. McEachran.

Philadelphia, July 5th, 1879.

Prof. D. McEachran:

Dear Sir—On looking over this month's Veterinary Review,

edited by Prof. Liautard, N. Y. (a few minutes ago) I was very much surprised to read on the last page (170), that "*Two statements appear, which are so at variance with the truth that we cannot refrain from calling attention to them.*" As the veracity of two professional men are thus brought into question, I cannot let this post leave without stating most positively that Prof. Liautard, in my presence, did tell you, more than once, that he did *not believe there was any cases of contagious pleuro-pneumonia in or near New York*, as he had made inquiry of several persons who would be likely to know, for a week past, and *had not heard* of any cases. At your request he telegraphed to a veterinary surgeon at Brooklyn, who, I believe, answered "no cases here at present." But when Dr. A. Lockhart volunteered to get a carriage and take us to Brooklyn to see if we could find any cases there, you invited him, Prof. Liautard, to accompany us. We called on Dr. McLean, veterinary surgeon of Brooklyn, who very kindly told us where we could find some cases; in fact took us to them, although out of his district.

I am quite sure that up to this time, Prof. Liautard was "sceptical of its existence," and if you had believed *what he told you* in my presence at the Veterinary College, New York, on the 25th of January last, you *would have left there without seeing* the numbers of cases near Brooklyn. Of course, I need not relate the terrible sight. I am satisfied Dr. Lockhart remembers the conversation, also the result of it all.

I write this only as a lover of truth and justice. You are at liberty to do what you think best with this letter. Trust you are well. Pray excuse this hurried scrawl, as it is just post time.

Yours respectfully,

JOHN W. GADSDEN, V.S.

In reply to the above communications I would say, that *if four months have been allowed to pass* without our notice of the official report of Prof. McEachran, it is for the simple reason that *we did not see it* until the "Four Bovine Scourges" was sent to us from England. True, we were told by Prof. McEachran that

such report was about being made, and that it would be sent to us as soon as printed, but we never received it. Why? Probably because it was not sent to us, the reason for which we prefer not to inquire for.

The facts which we desire to state are en masse about the same as Prof. McEachran states in his letter. He informed us of his presence in New York, asked us to show him some cases of pleuro-pneumonia, which, our practice being almost entirely city practice, we told him we could not do. He went to Washington. We told him we would inquire of Mr. McLean of Brooklyn, and let him know at his return. On inquiry from Mr. McLean, before, at or after a meeting of the New York Veterinary Society, he told us that he had none at present, as he had destroyed the last case in a stable a few days before.

Whether I mentioned Prof. McEachran's name or not, I do not remember, and I doubt if it would have made any difference as to the result. We think Dr. McLean would have shown us pleuro-pneumonic cows with or without such special notice being given. When Prof. McEachran returned to New York with Mr Gadsden, we told him that we did not know if Mr. McLean had any cases or not; that he had said that if we telegraphed to him he would do all he could to show us some; that we suggested the propriety of going to Brooklyn to see him; that we did so, in company with Gadsden and Lockhart; that, thanks to him, and only to him, did we owe the special privilege of finding Blissville. These are the facts, and it can be seen that neither Prof. McEachran nor ourselves, can say "you are another."

Regarding the letter addressed to Prof. McEachran by Mr. J. W. Gadsden, it appears to us very much like the fable of the bear, which, to save his master from the annoyance of a fly, crushed his head with a heavy stone. We fear that our friend Gadsden in his desire to see "truth come to the surface," is too positive about statements attributed to us, as we are as positively certain that we did not express such belief. Our only doubt was the chance of our exhibiting the gentleman the cases he was looking for.

A. LIAUTARD.

Editor Review:

No one detests more than myself the ventilation of personal matters through the columns of the REVIEW, and had not Prof. McEachran's report to the Canadian government been copied in Prof. Walley's most able work on "The Four Bovine Scourges," from which extracts were made in your last issue, I would have preferred to let the matter pass unnoticed in public print. But when we consider the general publicity which the report will gain among the members of the profession, by reason of its connection with "The Four Bovine Scourges," we feel that simple justice to our own efforts in the past warrants a defense against the reflection made in the following extract from Prof. McEachran's report:

"Accompanied by Mr. Gadsden, I visited New York and communicated with the Principal and Professors of the American Veterinary College, none of whom had any experience with the disease, and doubted the correctness of the rumors of its existence."

On page 33, Jan. issue of the REVIEW, 1877, in my article on "Stimulants in Disease," read before the meeting of the United States Veterinary Medical Association, held in Philadelphia, on Sept. 20th, 1876, is the statement: "In the summer of 1874, I treated thirty-three cases of epizootic pleuro-pneumonia, &c."

In the report of the Commissioner of Agriculture, made to the United States Government, on the 26th of Feb., 1878, page 49, is the following:

"Prof. A. A. Holcombe, D.V.S., lecturer on 'Special Pathology' in the American Veterinary College, New York, says: 'In reply to communication received from you last month, I can only give the facts relating to contagious pleuro-pneumonia as it exists in the State of New Jersey. It has prevailed to a greater or less extent, in some parts of the State, for a number of years past. That it is spreading is attested by recent outbreaks in localities where heretofore it has been unknown. In September, 1873, an outbreak of this disease occured on a large dairy farm at North Branch, Somerset County, N. J. It was treated by a quack of Somerville (in the same county), and nearly every case died. I

saw three of the cases and they were undoubtedly genuine cases of contagious pleuro-pneumonia. In June of the next year (1874) I attended an outbreak on an adjoining farm. About forty cows were affected. I treated thirty-three, five of which died. I made post-mortem examination of three, and found all the lesions and post-mortem appearances belonging to the above disease. The treatment given the cases was simply general and special stimulants. The small mortality in the outbreak can hardly be attributed to the treatment, but rather to exhaustion of the infecting virus. Isolation was strongly urged, but could not be effected, owing to the failure of the community to appreciate its contagiousness. The cause of the outbreak is unknown to me outside of the testimony of the owners of the affected cattle. In both instances they had bought strange cattle, one or more of which were coughing, and apparently not thriving. Undoubtedly this was the manner of introducing the disease, yet it needs confirmation. During the summer just passed (1877), a very serious and fatal outbreak has prevailed in the adjoining county of Hunterdon, in the neighborhood of Clinton and Lebanon. Of its cause I know nothing. The disease is a terrible scourge to some localities of that State. An investigatian of its cause and the best means of stamping it out is no doubt a subject worthy the attention of the Department of Agriculture.'"

In the May number of the REVIEW, 1878, page 87, in the report of a meeting of the New York State Veterinary Society, J. D. Hopkins, Secretary, says: "A. A. Holcombe called attention to a recent outbreak of this disease in the southern portion of Hunterdon County, N. J., and cited the fact that pleuro-pneumonia is rapidly spreading over that State, and he thought the time was rapidly coming when we will be called upon to prevent its further progress, &c."

Can any one believe that a veterinary surgeon who knows the history of contagious pleuro pneumonia, after giving expression to such statements as above quoted, could for a moment doubt "the correctness of the rumors of its existence?"

We have no desire to detract in any way from the credit due Prof. McEachran for the interest which his visit last January

aroused in our government regarding this disease, but at the same time we do not intend to submit to the implied reflection that until his visit we did not know or believe that our States were infected with contagious pleuro-pneumonia.

Respectfully,

A. A. HOLCOMBE, D.V.S.,

Adjunct Professor of Surgery, American Veterinary College

New York, July 21st, 1879.

VARIETIES.

VETERINARY MEDICINE IN SWEDEN.

BY PROF. E. MORELL, of Stockholm.

The first veterinary school of Sweden was founded by Hernguist (born in 1726). After passing his examination for Doctor of Philosophy at Upsala, he went in 1763, to France, where in Lyons he studied veterinary medicine. In 1774 he founded the veterinary school of Skara, and was professor to that school in 1778. He remained in this function till his death (1808). He was a writer and practitioner of merit. One of his best students, S. Norling, took his place in 1814. In 1820 he organized, by order of the government, the veterinary school of Stockholm, and was appointed director. He held this position in both schools till he died (1855). The Skara school was a preparatory school to that of Stockholm, where the students, after two or three years, passed their examinations of veterinarians. In those days as now, there were scholars from Swedan, Norway and Finland. A large number of the veterinarians of those three countries come from the Stockholm school.

In 1867 a royal ordinance required, for entrance to the Stockholm school, the degree of *bachelor es letters*. This measure elevating the veterinary education, was taken throngh the exertions of Professor Fredrick Lundbrey, and instead of diminishing the

number of students, it increased it. In requiring preparatory knowledge asked in but few, if any, of the European schools, the State also improved the pecuniary income of the veterinarians. A natural consequence of this material improvement was an increase in the number of the students.

The student, aged from 20 to 21, having passed his bacalaureate, is admitted to the veterinary institute. The length of duration of the studies is four (4) years, though it may be of six for the backward scholars.

The veterinary institute has four professors, with a salary of 5,600 francs, a lecturer who receives 4,200 francs, an adjunct and an instructor horseshoer.

Two of these professors, the adjunct and the shoer, live in the school, the others receive an indemnity of 700 francs for lodging.

The course is divided as follows:

Prof. H. Kinnberg—Anatomy, physiology, zoology and pathological anatomy.

Prof. Ernest Morell—Zootechny, sanitary medicine and clinical medicine.

Prof. G. Sjostedt—Surgery, obstetrics, horse-shoeing and clinical surgery,

Prof. C. Linguist—Pathology, therapeutics, epizootics, pharmacodynamy, pharmacotechny and clinic.

Lecturer, C. Ericsson—Botany, physics, chemistry, pharmacology.

The Adjunct assists in the clinics, and the Instructor Marechal teaches horse-shoeing.

There are in Sweden, thirty government veterinarians, with a salary of 2,100 francs.

Travelling expenses for the State are paid, 6 francs with indemnity.

Regiments of the army, while in garrison, have a regimental veterinarian (lieutenant), with a salary of 4,200 francs, and a squadron veterinarian (sub-lieutenant), with a treatment of 2,800 francs.

The number of civilian and army veterinarians is about 170,

all depending, in a scientific point of view, from the medical direction.

In 1866 a credit of 700,000 francs was allowed for the erection of another school at Stockholm, which will be finished in 1880.—*Echo Veter. Belge.*

VETERINARY LITERATURE.

The following bona-fide horse-farrier advertisement has been handed us by a friend, with the request that we would give it a place in the veterinary department. We do so with pleasure, simply remarking that if a cogent argument in behalf of the establishment of a veterinary college were needed, it would be found in the annexed advertisement, which we copy *verbatim et literatim et punctuatum*, except the name and place of residence of the advertiser.

"HORSE FARRIER.—The under sind lat from chester conty Intends follow Doctern horses & stock of all Kinds he has had great deal of practs among Sick horses & stock & flaters him self able to Master Most all deases & complants among horsis Pleas giv Me a call & if no cure no pay Except for medison if bought by Me. all orders left at My Residence will be promptly attend to.—*Farmer and Gardener.*"—*Prairie Farmer.*

EXCHANGES, ETC., RECEIVED.

HOME EXCHANGES.—Proceedings of the Medical Society of Kings County, Medical Record, Country Gentleman, Scientific American, Turf, Field and Farm, Ohio Farmer, Prairie Farmer, Practical Farmer, Medical and Surgical Reporter, &c., &c.

FOREIGN EXCHANGES.—Veterinarian, Veterinary Journal, Recueil de Medecine Veterinaire, Clinica Veterinaria, Gazette Medicale, Revue fur Thierheilkunde und Thierzucht, Schweizerisches Archi for Thierheilkunde (Berlin), Tidtskrift for Veterinarer, &c.

NEWSPAPERS.—American Cultivator (Boston), Husbandman, Ploughman, New England Farmer, Western Sportsman, Leader (Canada), The Gazette (Canada.)

COMMUNICATIONS.—F. S. Billings, V.M., Prof. D. McEachran, J. McKenzie, J. W. Gadsden, C. B. Michener, W. L. Williams, A. A. Holcombe, N. H. Paaren.

BOOKS.—Inoculations preventive, par. Ed. Deie.